inal and the cortical terminations in the opposite hemisphere are inverted, so that what is on the right in the retina is on the left in the cortex, and what is above in the former is below in the latter. Extirpation of any one portion of the cortical visual tract renders the corresponding part of the retina insensible ; extirpation of one "visual sphere" blinds the eye on the opposite side, except its outermost part ; extirpation of both cortical visual tracts causes complete and permanent blindness. In each visual tract is a central portion, characterized by the peculiarity that its extirpation produces a loss of visual memory in the opposite eye ; that is, the dog still sees, but does not recognize its food, etc., any more. This visual appreciation may later become restored. The author distinguishes between this kind of visual loss and ordinary loss of sight from injury to the cortex, and calls the former psychic blindness (*Seelenblindheit*) and the latter cortical blindness (*Rindenblindheit*). This spot, destruction of which causes psychic blindness, contains also the central terminations for those parts of the retina for the fixation of vision—corresponding to the fovea centralis in men. In the temporal lobe is situated the auditory cortical tract. This also contains a special spot, extirpation of which causes psychic deafness ; that is, the dog still hears, he pricks up his ears at a sound, but he no longer comprehends what it means.

The touch sense has also its region in the cortex, and indeed this "sensory sphere" involves nearly the whole of the convexity that is not occupied by the visual and auditory tracts. In this can be still further distinguished the subdivisions corresponding to different parts of the body, especially those for the anterior and posterior limbs, the head, an eye, ear, neck, and back regions. All these lie in the anterior half of the cortex, and show an arrangement that makes a relation between the results of our author and those of Hitzig appear certain.

In his experiments on monkeys Munk obtained results corresponding to those obtained in experimenting with dogs.

MECHANICAL EXCITATION OF THE NERVES.—K. Hallsten, *Nordiskt Med. Arkiv*, Trettonde Baudet, Första Häftet, 1881, No. 6, describes some physiological investigations on the excitation of nerves by the use of a new method. He so arranged a Marey's tambour that the lever should strike against the nerve when the membrane was put in vibration. This tambour was connected in the usual way by an india-rubber tube with another similar one, upon which an ivory ball fell from a determined height. The intensity of the excitation of the nerve was modified by the jointed lever, which is supplied with the more modern models of Marey's apparatus. To excite the different parts of the same nerve, the tripod which supports the tambour travels along the table of the myographion.

The author examined by the graphic method the mode of movement of the lever, and found that in each experiment the lever strikes twice against the nerve, and that the last shock occupied a considerable space of time, but did not exert as profound an influence from above downward as the first.

The researches were directed to the modifications of irritability caused by a transverse section, and also the irritability of different portions of the same nerve. As regards the first of these, Hallsten has found that the changes in the irritability produced by a transverse cut may also be demonstrated by mechanical excitation. Concerning the irritability of different parts of the same nerve, his experiments show that it reaches its maximum a little below the point where the nerve trunk leaves the plexus, and diminishes on each side of this maximum point; the irritability is less, on the other hand, below the point where the femoral branch leaves, and from there it increases in both directions.

Finally, he shows also that even with mechanical excitation, an irritant that is about at its minimum produces a muscular contraction in a great range of the charge, and that these contractions diminish with the charge.

As to the determination of the exact degree of the minimum excitant, there exists, according to M. Hallsten, no difficulty in determining by his method the limits between which it is to be found; nevertheless he considers all determinations of this kind as illusory so long as these so-called limits for the calculation of the minimum excitant cannot be expressed in figures.

THE GANGLIA OF THE URINARY PASSAGES OF MAN AND CERTAIN ANIMALS.—The following are the conclusions of a recent memoir by Prof. Rudolf Maier, of Freiburg, published in *Virchow's Archiv*, lxxxv, 1 Hft., July, 1881.

1. Upon all portions of the walls of the urinary passages ex-